

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

**BRUCHMANN et al**

Atty. Ref.: **4372-11**; Conf. No.: **8484**

Serial No. **10/510,438**

Group: **1794**

Filed: **October 7, 2004**

Examiner: **Dicus**

For: **MULTILAYER MATERIALS FOR PRODUCING PACKAGING**

\* \* \* \* \*

March 13, 2008

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPLICANTS' BRIEF ON APPEAL**

Sir:

This Appeal is from the "final" Official Action dated December 12, 2007, rejecting claims 1 and 3-12, all of the claims now pending in this application.<sup>1</sup> As will become evident from the following discussion, the Examiner's rejections are in error and, as such, reversal of the same is solicited.

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<sup>1</sup> The claims on appeal, which constitute all presently pending claims in this application, appear in the Section VIII Claims Appendix accompanying this Brief.

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**I. Real Parties In Interest**

The real parties in interest are the owners of the subject application, namely BASF Aktiengesellschaft and XSYS Print Solutions Deutschland GmbH.

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## **II. Related Appeals and Interferences**

No appeals and/or interferences related to this application are pending.

### **III. Status of Claims**

- A. The following claims are presently pending in this application: Claims 1 and 3-12.
- B. The following claims are the claims on appeal and have been finally rejected in the Examiner's "final" Official Action of March 6, 2007: Claims 1 and 3-12.<sup>2</sup>
- C. The following claims have been cancelled during prosecution to date: Claims 2 and 13-29.<sup>3</sup>
- D. The following pending claim(s) have been allowed: None
- E. The following pending claims have been withdrawn: None
- F. The following pending claims have been objected to: None

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<sup>2</sup> The rejection in the Official Action dated December 14, 2007 incorrectly identified claims 1-12. Since claim 2 was cancelled with the applicants' Amendment dated October 4, 2007, it will be assumed for the purpose of this Brief that the Examiner should have stated the rejection with regard to claims 1 and 3-12.

<sup>3</sup> As noted below, an Amendment After Final Rejection is being filed concurrently herewith which cancels without prejudice claims 19-29 deemed by the Examiner in the Official Action of December 14, 2007 to be drawn to an invention which is independent or distinct from claims 1 and 3-12.

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#### **IV. Status of Amendments**

An Amendment After Final Rejection is being filed concurrently herewith which cancels non-elected claims 19-29. As such, its entry under the provisions of 37 CFR § 41.33(b)(1) will be assumed for the purposes of appeal.

**V. Summary of Claimed Subject Matter<sup>4</sup>**

The invention as defined by independent claim 1 is directed to a method for producing packaging, comprising at least a first film of a polymeric material, a print layer which includes a packaging printing ink, and a second film. (Page 1, lines 4-5, page 3, lines 41-45). The printing ink is arranged between the first and second films, and is printed directly onto the first film or the second film. (Page 5, line 45 through page 6, line 2.) The packaging printing ink comprises at least one solvent or a mixture of different solvents, selected from the group consisting of alcohols, substituted alcohols and esters, (Page 13, lines 24-39) at least a hyperbranched polyester containing functional groups selected from the group consisting of OH, COOH and COOR groups, (Page 7, lines 19-21, for example) and optionally additives. (Page 13, line 41 through page 14, line 23.) The hyperbranched polyester has an acid number of 1-200 mg KOH/g, and an OH number of 50-500 mg KOH/g. (Page 8, lines 14-18.)

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<sup>4</sup> The numbers in parenthesis refer to page and line numbers of the originally filed specification.

**VI. Grounds of Rejection to be Reviewed on Appeal**

The following rejections were advanced in the final Official Action dated March 6, 2007:

1. Claims 1 and 3-12 stand rejected under 35 USC §103(a) as being unpatentable over Kaczun et al (WO 97/38849) in view of Anderson et al (USP 6,316,538).
2. Claim 5 stands rejected under 35 USC §103(a) as being unpatentable over Kaczun et al in view of Anderson et al and further in view of Pfeiffer et al (USP 6,517,932).

## VII. Arguments

### 1. Claims 1 and 3-12 are patentably unobvious over Kaczun et al and Anderson et al

The Examiner has advanced a "final" rejection of claims 1 and 3-12 as allegedly being unpatentable over Kaczun et al in view of Anderson et al. In this regard, the Examiner argues that:

"It would have been obvious to one having ordinary skill in the art to have modified the ink layer of Kaczun [et al] to employ the ink composition of Anderson [et al] including the solvents because they are useful ingredients for the aqueous dispersion for inks or coatings to arrive at the hyperbranched polyester with the claimed acid numbers exhibiting improved adhesion to polyolefin films".<sup>5</sup>

In support of her position, the Examiner cites to column 3, lines 23-24, column 23 and column 25, lines 30-55 of Anderson et al. Furthermore, in the "Response to Arguments" the Examiner continues to assert that:

"...Kaczun [et al] teaches in general inks printed in between polyolefin-based film layers...and Anderson [et al] explicitly teaches the inventive hyperbranched polyester included in inks, used in film printing and packaging, for the reason of adhering well to polyolefin films also".<sup>6</sup>

Again, reference is made by the Examiner to column 25, lines 30-45 of Anderson et al.

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<sup>5</sup> Official Action dated December 14, 2007 at page 3, lines 1-5.

<sup>6</sup> *Id.* at page 3, line 17 through page 4, line 2.



Applicants respectfully submit that the rejection advanced by the Examiner under 35 USC §103(a) is improper. In this regard, applicants note that it is incumbent upon the Examiner to show that the combined references teach or suggest *all* limitations of a rejected claim in order to establish a *prima facie* case of "obviousness". However, as will be detailed below, the Examiner has failed to show that either Kaczun et al or Anderson et al or both teach or suggest the **specific** hyperbranched polyester containing functional groups selected from OH, COON and COOR, having an acid number of from 1-200 mg KOli/g and having an OH number of from 50-500 mg KOH/g as is defined in the present applicants' claims on appeal.

Kaczun et al teaches a multilayer material comprising a perfume barrier layer consisting of a one component lacquer. According to page 5, 3<sup>rd</sup> paragraph of Cakzun et al, the one component lacquer is based on a polyester resin. Kaczun et al only teaches *linear aromatic polyesters* solubilized in an ester solvent, like ethyl acetate.

Anderson et al fails to teach or suggest a polyester polyol having an OH number from 50-500 mg KOH/g, as defined in the applicants' pending claims. In this regard, Anderson et al generally teaches the reaction product of an A polymer having 3.5 or more reactive functional groups per polymer chain and a B polymer having about 2 to about 3 functional groups per polymer chain that are co-reactive with the reactive functional groups of the A polymer. The condensation-reactive functional groups of polymer A and the co-reactive functional groups of polymer B can be chosen from a variety of different groups, the most preferred being carboxyl groups or hydroxyl groups.

Significantly, the reactive functional groups of the A polymer disclosed in Anderson et al can be selected from the group consisting of carboxyl, hydroxyl, epoxy, isocyanato, carboxyl anhydride, sulfo, esterified oxycarbonyl or amino, and the B polymer can be selected from polyamide, polyester, epoxy, polyurethane, polyorganosiloxan, polyether, preferable having co-reactive functional groups selected

from hydroxyl, epoxy, oxazolinyl or amino. Consequently, a large number of possible combinations between A polymers and B polymers, having different functional groups, is possible according to Anderson et al.

Furthermore, Anderson et al. only teach a very broad range of average molecular weight, ranging from about 4,000 to about 250,000, preferably between 5,000 to about 50,000 (column 8, lines 51-55 of Anderson et al.). i.e. the *general* disclosure of the polymers used according to Anderson et al. is rather unspecific. There is no suggestion towards the specific hyperbranched polyester polyol having an OH number of from 50-500 mg KOH/g as defined by pending independent claim 1.

The Examiner refers to column 25, lines 30-54 of Anderson et al. to support her rejection. The examples ("WBC-4 to WBC-6") make use of the polymer compositions of examples 16, 17 and 18 and were used to prepare ***aqueous dispersions of ammoniated polymeric dispersions*** by addition of water and neutralization with ammonium hydroxide. The aqueous polymer dispersion "may be formulated to form a clear, non-tacky, and continuous polymer film having improved adhesion to thermoplastic films...." (Column 25, lines 39-42 of Anderson et al.) The subsequent examples ("DC1-DC4") make use of the polymeric composition of example 14, which are also dissolved in ammonia-water solution. The polymeric composition of example 14 is prepared from the A polymer (4), which is a styrene/ $\alpha$ -methylstyrene/acrylic acid resin (see table I in column 10) having no OH groups, and B polymer (8), which is a polyamide resin made from a dimer acid, cyclohexyl amine and isophorone diamine, having also no OH groups. Consequently, the resulting polymeric composition also contains no OH groups.

The polymeric compositions of examples 16, 17 and 18 are prepared from A polymer (4) having an average carboxylic acid functionality ( $F_n$ ) of about 5 (4.72, see table 1) and propylene oxide of different chain length (PPO 425, PPO 1000 and PPO

4000 respectively), which is a diol. The A polymer and B polymer were reacted at a molar ratio of 2:1. Consequently, the resulting reaction product is an ABA polyester having essentially no OH groups, due to the large stoichiometric excess of carboxylic acid groups present in the reaction mixture of 5:1 over OH groups of the diol. Thus, none of the polymers of the examples fulfills the requirements of pending claim 1.

Thus, also the examples of Anderson et al do not remedy the lack of specific disclosure of the general description of Anderson with respect to the *specific* hyperbranched polyesters defined in the presently pending claims.

The Examiner asserts in "Response to Arguments" that:

"It is significant to note that Kaczun [et al] does not teach that the print layer is organic solvent-based contrary to applicants [sic] arguments on page 12 of the amendment [dated October 4, 2007]. Rather, Kaczun [et al] generally teaches inks which would include both solvent-based and water-based inks and thus combination with Anderson [et al] is proper."

It is unclear to the applicants which portion of Kaczun the Examiner is referring to in the above passage. Firstly, Kaczun et al is *not* related to inks, as erroneously asserted by the Examiner. In particular Kaczun et al does not teach or suggest the use of water-based inks. Quite to the contrary, Kaczun et al relates to a lacquer solution which is used as a perfume barrier layer between polyolefin-based films. Secondly, Kaczun et al clearly states on page 5 that the perfume barrier layer consists of a one-component lacquer, preferably based on polyester resins, and that the one-component lacquer is *solubilized in a solvent* preferably an ester, like ethyl acetate, forming a lacquer solution (page 5, 3<sup>rd</sup> paragraph of Kaczun et al).

On the other hand, Anderson et al relates to *dispersions* -- not solutions (which are technically something quite different). Specifically, Anderson et al discloses dispersions of polyesters in aqueous media, water, ammoniacal solutions or aqueous based solvent mixtures (which may include dispersants and co-solvents; see column 3, lines 23-24; column 9, lines 6-42 of Anderson et al). Anderson et al coherently refers to "aqueous dispersions" or "aqueous polymer dispersions" throughout the entire specification, including the examples. There is therefore no motivation for the ordinarily skilled in the art to use the polymeric compositions disclosed in Anderson et al, as part of ***aqueous polymer dispersions*** in the ***organic solvent-based solutions*** disclosed by Kaczun et al, with a reasonable expectation of success.

For these reasons, the Examiner's rejection under 35 USC §103(a) based on Kaczun et al and Anderson et al must be reversed.

**2. Claim 5 is patentably unobvious over Kaczun et al, Anderson et al and Pfeiffer et al**

The discussion above is equally germane to the *unobviousness* of pending claim 5 based on Kaczun et al, Anderson et al and Pfeiffer et al. Specifically, the Examiner asserts that the disclosure of PET and PEN in Pfeiffer et al renders "obvious" the subject matter of claim 5. However, Pfeiffer et al does not cure the deficiencies of Kaczun et al and Anderson et al as described above. Thus, even with the disclosure of Pfeiffer et al, an ordinarily skilled person would not be directed to the invention as defined in pending claim 5. As such, withdrawal of the rejection advanced separately against claim 5 under 35 USC §103(a) is likewise in order.

**3. Conclusion.**

In view of the above, applicants submit that the present invention is patentably *unobvious* over the applied references of record. For the reasons advanced, the

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Examiner's rejection of the pending claims herein under 35 USC §103(a) is in error and must be reversed. Such favorable action is solicited.

**4. Fee Authorization**

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:           /Bryan H. Davidson/            
Bryan H. Davidson  
Reg. No. 30,251

BHD:dlb  
1100 North Glebe Road, 8th Floor  
Arlington, VA 22201-4714  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

## **VIII. CLAIMS APPENDIX**

1. (previously presented) A multilayer material for producing packaging, comprising at least
  - a first film of a polymeric material,
  - a print layer which includes a packaging printing ink, and
  - a second filmwherein the print layer is arranged between the first and second films, and wherein the print layer is printed directly onto the first film or the second film, and wherein
  - said packaging printing ink comprises at least one solvent or a mixture of different solvents, selected from the group consisting of alcohols, substituted alcohols and esters, at least a hyperbranched polyester containing functional groups selected from the group consisting of OH, COOH and COOR groups, and optionally additives, and wherein the hyperbranched polyester has an acid number of 1-200 mg KOH/g, and an OH number of 50-500 mg KOH/g.
2. (cancelled)
3. (previously presented) A multilayer material as claimed in claim 1, wherein the first film is a multilayer film.
4. (previously presented) A multilayer material as claimed in claim 1, wherein the first film is a film selected from the group consisting of polyethylene, polypropylene, polystyrene, polyester, and polyamide films.
5. (previously presented) A multilayer material as claimed in claim 4, wherein the first film is a polar film selected from the group consisting of polyethylene terephthalate (PET), polyethylene naphthalate (PEN), and polyamide films.

6. (previously presented) A multilayer material as claimed in claim 1, wherein the second film is a film selected from the group consisting of polymer films, including metallized polymer films, and metal foils.

7. (previously presented) A multilayer material as claimed in claim 6, wherein the second film is a polyolefin film.

8. (previously presented) A multilayer material as claimed in claim 1, further comprising an odor barrier layer.

9. (previously presented) A multilayer material as claimed in claim 1, further comprising one or more adhesive layers.

10. (previously presented) A multilayer material as claimed in claim 1, further comprising at least one varnish layer as primer or protector.

11. (original) A multilayer material as claimed in claim 10, wherein the varnish layer comprises as binder at least one hyperbranched polyester containing functional groups selected from the group consisting of OH, COOH and COOR groups.

12. (previously presented) A multilayer material as claimed in claim 1, wherein the hyperbranched polyester contains COOH and OH groups.

13 – 29. (cancelled)

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**IX. EVIDENCE APPENDIX**

[ NONE ]



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**X. RELATED PROCEEDINGS APPENDIX**

[ NONE ]